APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,409	02/05/2004	Michael Brand	1584.1005	3865

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EXAMINER
ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
05/28/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/771,409	BRAND, MICHAEL
	Examiner	Art Unit	
	ANGELA A. ARMSTRONG	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>26 February 2009</u>.

2a) ☒ This action is FINAL.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-7,10-39,42-70 and 72-92* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-7, 10-39,42-70 and 72-92* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to Applicant's amendment filed February26, 2009,

amending claims 1-7, 10-32, 33, 65, and 79 and cancelling claims 8-9, 40-41, and 71. Currently,

claims 1-7, 10-39, 42-70, and 72- 92 are pending.

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

2.   Claims 1-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter.   Claim(s) 1-32 are rejected under 35 USC 101 as not falling

within one of the four statutory classes of invention. While the claim(s) recite a series of steps or

acts to be performed, a statutory "process" under 35 USC 101 must (1) be tied to another

statutory category (such as a manufacture or a machine), or (2) transform underlying subject

matter (such as an article or material) to a different state or thing. The instant claim(s) do not

transform underlying subject matter to a different state or thing, therefore, the claims must be

tied to another statutory category by identifying the apparatus performing the steps of the

method, where "identifying the apparatus" requires that the process claim explicitly recite the

particular machine or apparatus, or recite a step that inherently involves the use of a particular

machine or apparatus. The claimed methods of 1-7 and 10-32 could be performed by a human,

and thus are not tied to another statutory class. Regarding claim 1, the steps of providing an input

sequence associated with a transcript to the automatic system, observing an output sequence of

the system generated in response to the input, comparing the output sequence with the transcript

and using the statistics to process automatically an original output sequence of the automatic

system and produce an alternate output sequence, by at least one of supplementing and replacing

at least part of the original output sequence, could be performed by a human entering input for a

for a speech recognizer, then observing possible recognition candidates output by the recognizer

and comparing the candidates with the original transcript, and finally using the comparison

statistics to correct or alter the candidates output from the recognizer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-7, 10-39, 42-70 and 72-92 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Reich (US Patent Application No. 2002/0173955) in view of McDonough (US

Patent No. 5,625,748).

4.   Regarding claim 1, Reich discloses a method of processing outputs of an automatic

system for probabilistic detection of events, comprising: collecting statistics related to observed

outputs of the automatic system; and using the statistics to process automatically an original

output sequence of the automatic system and produce an alternate output sequence, by at least

one of supplementing and replacing at least part of the original output sequence (paragraphs

[0020, 0022-0023, 0025-0036]). Reich does not teach, but McDonough teaches providing at

least one input sequence to the automatic system, the input sequence associated with a transcript;

observing an output sequence of the automatic system generated in response to the provided at

least one input sequence; and comparing the output sequence with the transcript (col. 9, line 65

to col. 10, line 21; Figure 12A), and it would have been obvious to one of ordinary skill at the

time of the invention to modify the system of Reich so as to improve the performance of the

recognizer by making direct use of the confidence scores, as suggested by McDonough at col. 4,

lines 15-20.

Regarding claim 2, Reich discloses at least part of the alternate output sequence contains

information that can be used by systems that can use the at least part of the original output

sequence directly (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 3, Reich discloses data in the alternate output sequence includes

confidence assessments regarding parts of at least one of the original and alternate output

sequences, where the confidence assessments supplement data in the original output sequence

(paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 4, Reich discloses data in the alternate output sequence includes

confidence assessments regarding parts of at least one of the original and alternate output

sequences, where the confidence assessments replace at least part of the original output sequence

(paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 5, Reich discloses the alternate output sequence includes information of

a plurality of alternatives that can replace at least part of the original output sequence that can be

used by systems that can use the at least part of the original output sequence directly (paragraphs

[0020, 0022-0023, 0025-0036]).

Regarding claim 6, Reich discloses data in the alternate output sequence includes confidence assessments regarding parts of the alternatives, where the confidence assessments supplement data in the original output sequence (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 7, Reich discloses data in the alternate output sequence includes confidence assessments regarding parts of the alternatives, where the confidence assessments replace at least part of the original output sequence (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 10, Reich discloses the detected events involve word recognition (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 11, Reich discloses the automatic system is an automatic speech recognition system (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 12, Reich discloses the automatic speech recognition system operates on low-grade audio signals having word recognition precision below 50 percent; and wherein said method further comprises utilizing human transcription of the low- grade audio signals as a source for data relating to the statistics being collected (paragraphs [0020, 0022-0023, 0025-0036]; Figure 12A; col. 9, line 65 to col. 10, line21).

Regarding claim 13, Reich discloses the automatic probabilistic event detection system is an automatic character recognition system (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 14, Reich discloses the alternate output sequence includes an alternate recognition score for at least one of the words (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 26, Reich discloses comprising repeating said collecting on several statistically different training materials (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 27, Reich discloses collecting uses samples of statistically different sets of materials as initial training material (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 28, Reich discloses identifying parameters that remain invariant between the statistically different sets of materials (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 29, Reich discloses identifying improves estimation of at least one of the parameters (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 30, Reich discloses identifying is used to enable training when available statistically self-similar sets of materials are too small to allow effective training (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 31, Reich discloses identifying is used to increase effectiveness of further training on material that is not statistically similar to initial training material (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 32, Reich discloses material used for said collecting is statistically similar to material used during said using (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claims 33-39, 42-46 and 58-64, Reich discloses the invention can be implemented within a computer system with a CPU and various memory devices (paragraph [0022]) which provides support for the computer readable medium for controlling at least one computer system that performs method systems are rejected under similar rationale as claims 1-7, 10-14 and 26-32.

Regarding claims 65-70 and 72, Reich discloses the invention can be implemented within a computer system with a CPU and various memory devices (paragraph [0022]) which provides

support for the apparatus for processing outputs and are rejected under similar rationale as claims 1-7, 10-14 and 26-32.

Regarding claims 79-86, Reich discloses the invention can be implemented within a computer system with a CPU and various memory devices (paragraph [0022]) which provides support for the system for processing outputs and are rejected under similar rationale as claims 1-14 and 26-46.

Regarding claims 15-25, 47-57, 73-78 and 87-92, Reich fails to teach building a first model modeling behavior of the automatic system as a process with at least one inner state, which may be unrelated to inner states of the automatic system, and inferring the at least one inner state of the process from the observed outputs of the automatic system; building a second model, based on the statistics obtained by said collecting, to infer data to at least one of supplement and replace at least part of the original output sequence from the at least one inner state of the process in the first model. McDonough discloses a system for topic discrimination using posterior probability scores or confidence scores, such that topic modeling is the process of constructing a probability model for the word or event occurrence patterns observed in given speech; probability models are trained using sets of word occurrence statistics; and is used to select a subset of the potential speech events (Figures 1-3; col. 5, line 42 continuing to col. 6, line 53 and col. 11, line 65 continuing to col. 12, line 64), and it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Reich so as to improve the performance of the recognizer by making direct use of the confidence scores, as suggested by McDonough at col. 4, lines 15-20.

Response to Arguments

5.   Applicant's arguments with respect to claims 1-7, 10-39, 42-70 and 72-92 have been

considered but are moot in view of the new ground(s) of rejection.

Conclusion

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to ANGELA A. ARMSTRONG whose telephone number is

(571)272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Angela A Armstrong/
Primary Examiner, Art Unit 2626